

**CAR SECURITY ALARM SYSTEM ANALYSIS-DISTANCE AWAY VIA REMOTE  
CONTROL THROUGH SMS AND GPS GSM NETWORK  
AS VEHICLE TRACKER  
BASED MICROCONTROLLER ATmega16**

**ABSTRACT**

**Sri Mulyono  
NIM.085002244030**

This study aims to (1) develop a Safety Car Alarm System Remote Control Via SMS Through GSM and GPS as an Vehicle Tracker based microcontroller ATmega16, (2) determine the feasibility of the tool to the quality standard ISO of the functionality, security, performance, usability.

This study was conducted in Department automotive SMK Negeri 2 Depok Yogyakarta. This study uses Research and Development. Object of this study is Car Security Alarm System Remote Control Via SMS Through GSM and GPS as Microcomputer-Based Vehicle Tracker ATmega16. Stages of product development include: 1) Needs Analysis, 2) Design Systems, 3) Implementation, 4) Testing. The method used in the data collection included 1) Questionnaire functionality testing performed by an expert, 2), security Testing, Performance conducted by researchers, 3) Questionnaire usability test conducted by Student Class XI Department of Automotive Engineering at SMK Negeri 2 Depok Sleman, Yogyakarta. The methods used to analyze data with qualitative descriptive analysis techniques.

Based on the test results and analysis can be concluded that used Software Code Vision AVR, ATmega microcontroller 16, Wavecom M1206B Modem, GPS module EM-411, IC MAX232, Relay Pin 8 feet, 8 Relay 12V/30A, PIR Sensor, Vibration Sensor and Light sensors can be made car safety alarm system remote Remote control Via SMS Through GSM and GPS to control and facilitate the search the vehicle. Test results obtained from the percentage of 100% functionality, test results obtained security percentage of 100%, the speed of execution of the Performance Test SMS obtained percentage of 87.75%, and the ease of use of the Usability Value obtained percentage of 75.10%.

**Keywords:** SMS, GSM, GPS, Microcontroller